



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: : **PATENT APPLICATION**

R. Chidambaran, et al. : **METHOD FOR PREPARING**  
: **AN ION EXCHANGE MEDIA**

Serial No.: 10/687,159 : **Group Art Unit: 1713**

Filed: October 16, 2003 : **Examiner: Bernshteyn, Michael**

Confirmation No: 6637 :

**DECLARATION PURSUANT TO 37 C.F.R. § 1.132**

I, Ravi Chidambaran, declare as follows:

1. I have personal knowledge of the information contained herein.
2. I have over 26 years of experience with electrodeionization, electrodialysis, chemical and electrochemical processes. I consider myself to be skilled in those arts.
3. I am a co-inventor of the subject matter claimed in U.S. Patent Application No. 10/387,159 ("the '159 application") and as such, I am familiar with the subject matter presented therein. I am also familiar with the prosecution of the '159 application. I have seen and am familiar with the contents of the photographs cited in this Declaration as Figures A-T.
4. Figures A-G show one embodiment of the invention claimed in the '159 application. Figures A, B, and C show cation and anion halves of the transport framework prior to assembly.
5. Figures D and E show different views of a framework. In this embodiment, in addition to contact of the cation and anion resin parts at the ends of the framework, there are three additional lines of contact acting as flow dividers in the center of the apparatus. Contact of

the cation framework and anion portion of the framework is also shown in the side perspective view of Figure E.

6. Figures F and G show addition of porous cation and anion resin blocks into the flow paths defined by the framework.

7. Figures H through T show an additional embodiment of the invention. This embodiment is also shown, for example, in Figure 3 of the application. Figures H and I show unassembled cation and anion sides of the transport framework. Perspective views of the framework are shown in Figures J and K. Figure L shows the unassembled anion part of the framework, and the unassembled part of the cation transport framework, as well as cation resin blocks and anion resin blocks.


8. Figures M through O show assembled frameworks of the invention including alternating cation and anion resin blocks. As can be seen from Figure M, the anion part and cation part of the framework meet at four different lines, one at each end of the framework and two at the center, which define multiple flow paths. The contact between the cation and anion portions is noted on the side of the media in Figures N and O. Figure P also shows an assembled media of the invention.

9. Figures Q through T show media of the invention placed within a standard dilute chamber as will be recognized by those skilled in the electrodeionization arts. Figure R shows the dilute chamber which is being held up by the person displaying the media, as well as a cation membrane in the bottom of the spacer. In Figure S, the anion membrane has been placed over the media and the spacer. Note that the anion membrane, which is being held by the person displaying the media, contacts only the anion resin portion of the media. The cation resin portion, which can be seen as the dark area near the center of the spacer, does not contact the

anion membrane. Similarly, the anion resin on either side of the cation resin does not contact the cation membrane.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made, are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of any patents issuing from the present application.

Date: 10<sup>th</sup> July, 2006

By:   
Ravi Chidambaran